AMENDED CLAIMS

1. An isolated protein which has antifungal activity, preferably anti-Oomycete activity, and more preferably anti-*Phytophthora* and/or anti-*Pythium* activity and which is obtainable from a plant source, encoded by the nucleotide sequence as shown in SEQ ID NO: 15, SEQ ID NO: 19, SEQ ID NO: 57, SEQ ID NO: 70, SEQ ID NO: 72 or SEQ ID NO: 74 or parts or muteins thereof.

2. An isolated protein according to claim 1, characterised in that the protein is naturally occurring in sunflower or lettuce.

3. An isolated plant protein having carbohydrate oxidase activity, characterised in that it has antifungal activity, preferably anti-Oomycete activity, and more preferably anti-*Phytophthora* and/or anti-*Pythium* activity.

4. A carbohydrate oxidase, characterised in that it has an amino acid sequence according to SEQ ID NO: 16, SEQ ID NO: 20, SEQ ID NO: 58, SEQ ID NO: 71, SEQ ID NO: 73 or SEQ ID NO: 75 or parts or muteins therefrom.

5. An isolated antifungal protein, characterised in that it comprises one or more of the peptides selected from the group consisting of:
(a) amino acids 1 to 25 of SEQ ID NO: 1,
(b) amino acids 1 to 25 of SEQ ID NO: 2,
(c) amino acids 1 to 118 of SEQ ID NO: 6,
(d) amino acids 1 to 529 of SEQ ID NO 16, or a part of said sequence having antifungal activity,
(e) amino acids 1 to 529 of SEQ ID NO 20, or a part of said sequence having antifungal activity,
(f) amino acids 1 to 21 of SEQ ID NO: 49
(g) amino acids 1 to 24 of SEQ ID NO: 50
(h) amino acids 1 to 14 of SEQ ID NO: 51
(i) amino acids 1 to 540 of SEQ ID NO 58, or a part of said sequence having antifungal activity,
(j) amino acids 1 to 508 of SEQ ID NO 71, or a part of said sequence having antifungal activity,
(k) amino acids 1 to 508 of SEQ ID NO 73, or a part of said sequence having antifungal activity,
(l) amino acids 1 to 509 of SEQ ID NO 75, or a part of said sequence having antifungal activity,
as well as muteins thereof which have antifungal activity.

6. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 15, or by part of said open reading frame.

7. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 57, or by part of said open reading frame.

8. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 70, or by part of said open reading frame.

9. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 72, or by part of said open reading frame.

10. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 74, or by part of said open reading frame.

11. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by the open reading frame represented by SEQ ID NO: 19, or by part of said open reading frame.

12. An antifungal protein comprising an amino acid sequence characterised in that it is capable of being encoded by one of the open reading frames represented by SEQ ID NO's: 21 - 48.

13. An isolated DNA sequence comprising an open reading frame capable of encoding a protein according to any of the claims 1 to 12, and DNA capable of hybridising therewith under stringent conditions.

14. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 5.

15. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 15.

16. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 19.

17. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 21-48.

18. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 57.

19. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 70.

20. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 72.

21. An isolated DNA sequence according to claim 13, characterised in that it comprises the nucleotide sequence depicted in SEQ ID NO: 74.

22. A chimeric DNA sequence comprising a DNA sequence according to any of claims 13 to 21.

23. A chimeric DNA sequence according to claim 22, further comprising a transcriptional initiation region and, optionally, a transcriptional termination region, linked to the open reading frame which is capable of expressing a protein of any of claims 1-12.

24. A chimeric DNA sequence according to claim 23, wherein the RNA comprising said open reading frame is capable of being translated into protein in said host cell, when present therein, thereby producing said protein.

25. A chimeric DNA sequence according to any one of claims 22 to 24 which is a replicon.

26. A chimeric DNA sequence according to claim 25 which is a vector.

27. A vector according to claim 26, which is a binary vector.

28. A host cell comprising a replicon according to claim 25 and which is capable of maintaining said replicon once present therein.

29. A host cell comprising a vector according to claim 26 or 27 and which is capable of maintaining said vector once present therein.

30. A host cell stably incorporating in its genome a chimeric DNA sequence according to claim 22 or 23.

31. A host cell according to claim 30 which is a plant cell, said vector being a non-integrative viral vector.

32. A host cell according to claim 30 which is a plant cell.

33. A plant or a plant part comprising at least one plant cell according to claim 31 or 32.

34. A plant or a plant part consisting essentially of plant cells according to claim 32.

35. A plant according to claim 34, characterised in that said chimeric DNA is expressed in at least a number of the plant's cells causing the said antifungal protein to be produced therein.

36. A method for the production of a protein with antifungal activity, preferably anti-Oomycete activity, and more preferably anti-*Phytophthora* and/or anti-*Pythium* activity, characterised in that a host cell according to claim 29 to 32 is grown under favourable conditions and that said protein is recovered from the host cells.

37. A method for the production of a protein with antifungal activity, preferably anti-Oomycete activity, and more preferably anti-*Phytophthora* and/or anti-*Pythium* activity, characterised in that a host cell according to claim 29 to 32 is grown under favourable conditions and that said protein is isolated from the culture medium.

38. Use of a protein according to any one of claims 1 to 12 for retarding fungal growth, preferably Oomycete growth and more preferably the growth of *Phytophthora sp.* and/or *Pythium sp.*

39. A plant-derived protein having a molecular weight of 55-65 kD, characterized in that it has carbohydrate oxidising activity.

40. A protein according to claim 39, characterized in that it is a hexose oxidase.

41. A protein according to claim 40, characterized in that it is obtainable from sunflower or lettuce plants.

42. A method of retarding the growth of the a fungus, preferably an Oomycete, more preferably *Phytophthora* or *Pythium* on plant leaves, characterised in that the plant is treated with a protein produced from a host cell according to claim 29 or 30, or from a cell of a plant according to claim 35.

43. A method for obtaining plants with reduced susceptibility to fungi, preferbly Oomycetes, more preferably *Phytophthora* or *Pythium*, comprising the steps of
(a) introducing into ancestor cells which are susceptible of regeneration into a whole plant,
- a chimeric DNA sequence comprising an open reading frame capable of encoding a protein according to any of claims 1-12, said open reading frame being operatively linked to a transcriptional and translational region and, optionally, a transcriptional termination region, allowing the said protein to be produced in a plant cell that is susceptible to infection by said fungus and
- a chimeric DNA sequence capable of encoding a plant selectable marker allowing selection of transformed ancestor cells when said selectable marker is present therein, and
(b) regenerating said ancestor cells into a plant under conditions favouring ancestor cells which have the said selectable marker, and
(c) identifying a plant which produces a protein according to claim 1-7, thereby reducing the susceptibility of said plant to infection by said fungus.

44. The method according to claim 43, characterised in that step (a) is performed using an *Agrobacterium tumefaciens* strain capable of T-DNA transfer to plant cells and which harbours a binary vector, and wherein step (b) is performed in the presence of an antibiotic favouring cells which have a neomycin phosphotransferase.

45. An antifungal composition comprising a protein according to any one of claims 1 to 12, and a suitable carrier.

46. An antibody capable of recognising a protein according to any one of claims 1 to 12.

47. A nucleic acid sequence obtainable from a gene encoding a protein according to any one of claims 1 to 12, having tissue-specific and/or developmental specific transcriptional regulatory activity in a plant.

48. A nucleic acid sequence according to claim 47, which is obtainable from the region upstream of the translational initiation site of said gene.

49. A nucleic acid sequence according to claim 48, which has at least 1000 nucleotides of said region upstream of the translational initiation site of said gene.

50. Use of a nucleic acid sequence according to any one of claims 47 to 49 for making a plant expressible gene construct.

add Cl 7